Fanless, Ultra Low Voltage Cerelon 400MHz
Box-PC 620 series

IPC-BX/M620(PCW)C Series

The below : IPC-BX/M620(PCW)C
The above : IPC-BX/M620(PCW)CP
Other than these products, there is a model with 4 expansion slots / without Write filter function. For more details on this, please contact your retailer.

Model	Expansion Slot	OS (storage device)
IPC-BX/M620(PCW)C	–	–
IPC-BX/M620(PCW)CP	Shared PCI/ISA slot x 2	

* Specifications, color and design of the products are subject to change without notice.

These products are IBM PC/AT compatible, box computer designed for industrial use based on a low-power-consumption CPU of the Ultra Low Voltage Intel(R) Celeron(R) Processor 400MHz, to operate as a completely nature-cooled (fanless) system. The box computer provides a variety of interfaces including the USB, 100BASE-TX, and RS-232C ports, capable of serving for a wide range of applications as a compact platform based on a general-purpose PC OS. As this series incorporates handpicked components such as the embedded types of CPU and chipset, it excels in environmental resistance and remains in stable supply for an extended period of time. You can therefore use the box computer under severe operating conditions such as FA with ease.

* 2.5 inches hard disk drive (HDD) of our company has not guaranteed use by continuation and continuation power for 24 hours. When it is used by continuation operation and continuation power a life fails extremely. In the case of a 24-hours operation system, use of our company silicon disk drive (SDD) is recommended.

Features

Equipped with the Ultra Low Voltage Intel(R) Celeron(R) Processor 400MHz (FSB 100MHz) CPU and memory conforming 256MB as standard

Fan-less operation achieved by natural air-cooling

High reliability and completely silent running (when fitted with the silicon disk from CONTEC)

Long, reliable supply (The CPU and chip set are embedded versions.)

Adoption of BIOS (Phoenix Technologies, Ltd.) customized by CONTEC to support the BIOS level

Other than the conforming PC I/F, equipped with the PCMCIA (for CardBus), Audio (AC97 conforming), 100BASE-TX and RAS I/F as a standard

Equipped with a secondary-IDE connector to allow an optional external CD-ROM to be connected

Capable of starting up, even with the battery dead, using CMOS data retained by EEPROM

Front part is the ingress protection for IP65 performance

Supported OS

Windows 2000 Professional
Windows NT Workstation 4.0(SP6a)
Windows XP Embedded
Windows NT Embedded 4.0

Functional Specifications

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Model		IPC-BX/M620(PCW)C	IPC-BX/M620(PCW)CP
CPU		Ultra Low Voltage Intel(R) Celeron(R) Processor, FSB100MHz	
Chip set		Intel(R) 815E	
Memory	L2 Cache	256KB	
	Main memory	256 MB standard *1 / Max. 256MB (3.3V 144pin SO-DIMM PC100 Socket x 2)	
	BIOS ROM	128KB E0000H - FFFFFH (Phoenix)	
Video	Controller	Intel 815E (Built into the controller)	
	Video RAM	Main memory shared	
	Video BIOS	48KB (C0000H - CBFFFF)	
	Display I/F	DVI-I 29pin *2	
Audio		AC97 compliant LINE IN: ϕ3.5 Stereo mini jack Full-scale input level 1.3Vrms(Typ.) LINE OUT: ϕ3.5 Stereo mini jack Full-scale input level 1.0Vrms(Typ.) MIC UN: ϕ3.5 monaural mini jack Full-scale input level 1.3Vrms(Typ.)	
FDD I/F		Equipped with a dedicated 26pin, half-pitch connector: 2 modes (Optional FDD: PC-FDD25BH)	
IDE HDD I/F	Primary	Ultra DMA/100 2.5 inch IDE HDD or silicon disk drive: 1 internal unit (One more unit can be added. Either of the two must be a silicon disk drive.)	
	Secondary	Equipped with a dedicated 40pin, half-pitch connector (for connection of an optional CD-ROM) (right surface)	
Serial I/F		RS-232C(general-purpose): 2ch (SERIAL PORT1,2) 9pin, D-SUB connector RS-232C(touch panel): 1ch (SERIAL PORT3) [inside the DVI connector] *3 *4 RS-422/485(general-purpose): 1ch (SERIAL PORT4) [inside the RAS connector] *4	
Parallel I/F *4		Bi-directional, Centronics-compliant, 25pin D-SUB connector	
LAN	I/F	Ethernet 100BASE-TX/10BASE-T RJ-45 connector	
	Controller	Intel ICH2 integrated	
PC card slot		PCMCIA Type I, II x 2 or III x 1 (Startup from ATA card not allowed) CardBus correspondence	
USB I/F		2ch (USB 1.1)	
Keyboard I/F		PS/2 type keyboard -compatible (6pin MINI DIN connector)	
Mouse I/F		PS/2-type mouse-compatible (6pin MINI DIN connector)	
General-purpose I/O *4		3 opto-isolated inputs and outputs (However, one output also serves as an external WDT output and one input also serves as remote reset. They become available when switched.)	
RAS function *4		WDT: 1sec - 255sec (RESET or external output is allowed at time expiration) Remote reset: External input signal	

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Model		IPC-BX/M620(PCW)C	IPC-BX/M620(PCW)CP
Expansion board slot		None	PCI/ISA shared slot x 2 *5, Installable board length : 240mm (Max.)
RTC/CMOS		Lithium backup battery life: 10 years or more	
Power supply	Input supply voltage	Automatically switched between 85 - 132 VAC and 170 - 265 VAC (47 - 63 Hz)	
	Current consumption	50VA (Max.)	90VA (Max.)
	Expansion board power-supply capacity	None	+5V: 2A(1A x 2 Slot), -5V: Not supplied, +12V: 0.5A, -12V: 80mA
Physical dimensions (mm)		262(W)x262(D)x55(H)	262(W)x262(D)x115(H)
Weight		Approx. 3.3kg	Approx. 4.2kg

*1 A 256 MB memory module is plugged in one socket.
*2 The interface can connect the PC to a CONTEC Panel Link input type display (using an optional cable) or an ordinary analog RGB input display (using the bundled DVI-analog RGB adapter).
*3 The interface is used for the CONTEC Panel Link or touch panel type display.
*4 Serial ports 3 and 4 can be used as general-purpose RS-232C ports by replacing the bracket(Bundled). In that case, the touch panel, RAS functions (WDT time-out output and remote reset input), RS-422/485, general-purpose inputs, and parallel interfaces are disabled.
*5 The following signals cannot be used on ISA bus slots.
-5V, IOCHK, REFRESH, MASTER
The PCI bus slots comply with the 32-bit specification. Use of combined 32/64-bit boards has not been verified.

Installation Environment Requirements

Parameter			Requirement description
Power supply specifications	Allowable instantaneous		Less than 20ms
	Power outage		One minute each for 3.0 kVAC (input-output), 2.0 kVAC (input-FG), and 0.5 kVAC (output-FG)
	Dielectric strength		50MΩ (500VDC)
Ambient specifications	Operating temperature		0 - 50°C(SDD in use) 5 - 45°C(HDD in use) 5 - 45°C(FDD in use)
	Storage temperature		-10 - 60°C
	Humidity *1		10 - 90%RH(No condensation)
	Floating dust particles		Not to be excessive
	Corrosive gases		None
	Line-noise resistance	Line noise	AC line/±2kV, Signal line/±1kV (IEC1000-4-4Level 3, EN61000-4-4Level 3)
		Static electricity resistance	Contact discharge/±4kV (IEC1000-4-2Level 2, EN61000-4-2Level 2) Atmospheric discharge/±8kV (IEC1000-4-2Level 3, EN61000-4-2Level 3)
	Vibration resistance *2	Sweep resistance	10 - 57Hz/semi-amplitude 0.15mm 57 - 150Hz/2.0G 80 min. each in x, y, and z directions (JIS C0040-compliant, IEC68-2-6-compliant)
	Impact resistance *2		10G, half-sine shock for 11 ms in x, y, and z directions (JIS C0041-compliant, IEC68-2-27-compliant)
	Grounding		Class D grounding (previous class 3 grounding)

*1 When a floppy disk is not in use.
*2 When the HDD and FDD are not in use.

List of Options

Memory for extension (144pin SO-DIMM)
PC-MSD128-144H 128MB SD memory module
PC-MSD256-144V 256MB SD memory module

Silicon disk drive for extension (IDE 2.5inch) [PCI Board Type] For IPC-BX/M620(PCW)CP
PC-RSD1000-PCI 1GB silicon disk drive
PC-RSD2000-PCI 2GB silicon disk drive
PC-RSD4000-PCI 4GB silicon disk drive
PC-RSD8000-PCI 8GB silicon disk drive

Hard disk drive (IDE 2.5inch)
PC-HDD40G 40GB hard disk drive

Silicon disk drive (IDE 2.5inch)
PC-ESD500 512MB silicon disk drive
PC-ESD1000 1GB silicon disk drive
PC-ESD2000 2GB silicon disk drive
PC-ESD4000 4GB silicon disk drive
PC-ESD8000 8GB silicon disk drive
PC-ESD500-A 512MB silicon disk drive
PC-ESD1000-A 1GB silicon disk drive
PC-ESD2000-A 2GB silicon disk drive
PC-ESD4000-A 4GB silicon disk drive
PC-ESD8000-A 8GB silicon disk drive

Floppy disk unit
PC-FDD25BH 3.5inch floppy disk drive (comes with a cable)

Terminal block for connecting the RAS connector
IPC-PSD-20 Terminal block for connecting the RAS connector

TFT color liquid-crystal display
<Analog RGB types>
FPD-H21XT-AC (15 inch 1024 x 768 dots, Panel mounted type)
FPD-L21ST-AC (12.1 inch 800 x 600 dots, Panel mounted type)
FPD-M21VT-AC (10.4 inch 640 x 480 dots, Panel mounted type)

<Panel Link types>
IPC-DT/H40X(PC)T (15.0inch 1024 x 768 dots, Panel mounted type)
IPC-DT/L40S(PC)T (12.1 inch 800 x 600 dots, Panel mounted type)
IPC-DT/L440(PC)TA (12.1 inch 800 x 600 dots, Desktop/wall-mounted)
IPC-DT/L440(PC)TB (12.1 inch 800 x 600 dots, Desktop/wall-mounted, anti-glare type)

Panel link-DVI-D conversion cable
IPC-DVI/D-020 DVI-D type display cable (2m)
IPC-DVI/D-050 DVI-D type display cable (5m)

Display cable only for PanelLink
IPC-DVIPL-020 DVI-PanelLink conversion display cable (2m)
IPC-DVIPL-050 DVI-PanelLink conversion display cable (5m)

CD-ROM/ DVD-ROM drive
IPC-CDD-03*3 CD-ROM/ DVD-ROM drive
IPC-CDC-03 CD-ROM/ DVD-ROM drive cable

Driver
IPC-SLIB-01 Driver & Utility Soft Set (CD-ROM version) *1*2

Ferrite Core
FRC2009A-6 Ferrite Core 20/09mm (6 pieces)

*1 If your BOX-PC is an OS preinstalled model, the driver is supplied with the OS or already installed on the PC.
*2 You can download the driver from the Download Library (http://www.contec.com/download) on the CONTEC web site. If you need IPC-SLIB-01 (CD-ROM version), it is available as a separately priced option.
*3 Please Purchase an optional cable for connection [IPC-CDC-03].
* Check the CONTEC's Web site for the latest information on these options.

Packing List

Main Body …1
AC Power Cable …1
DVI-Analog RGB Adapter …1
SERIAL3-4 Bracket …1
Set Angle …2
AC Power Cable Lock …1
Slot Cover (Only CP type) …2
PCMCIA Card Lock …1
Cramp …1
+- Pan-Head Screw with SW,W (M3×6) …7
+- Pan-Head Screw with SW,W (M4×8) …4
IPC-SLIB-01*1 (Driver & Utility Soft Set)…1
Recovery Media …1
Royalty consent contract …1
Setup procedure document …1
Using caution sheet …1
Product guide …1

*1 Products with Embedded OS don't include IPC-SLIB-01.
* Users manual are not include.

Component Life

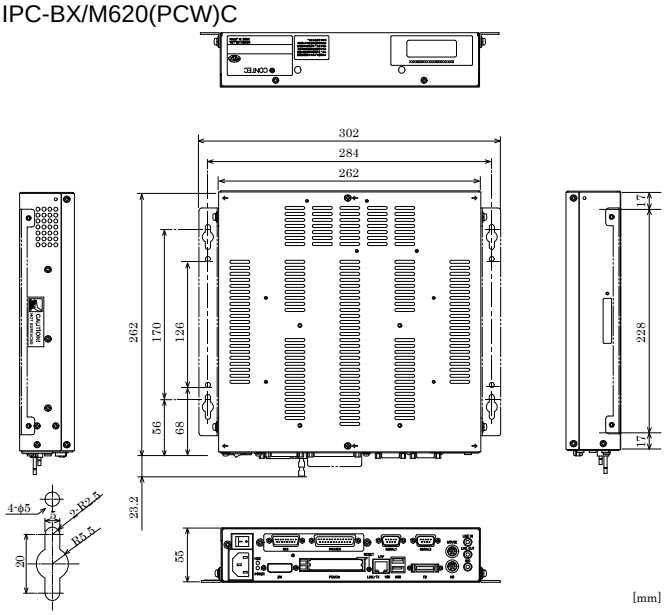
(1) Power supply ---Estimated life is about 10 years based on continual operation at 40°C (horizontal installation). However, (higher) operating temperatures will result in shorter life.

(2) Battery ---The internal calendar clock and CMOS RAM are backed by a Lithium primary battery. The backup time at a temperature of 25°C with the power disconnected is 10 years or more.

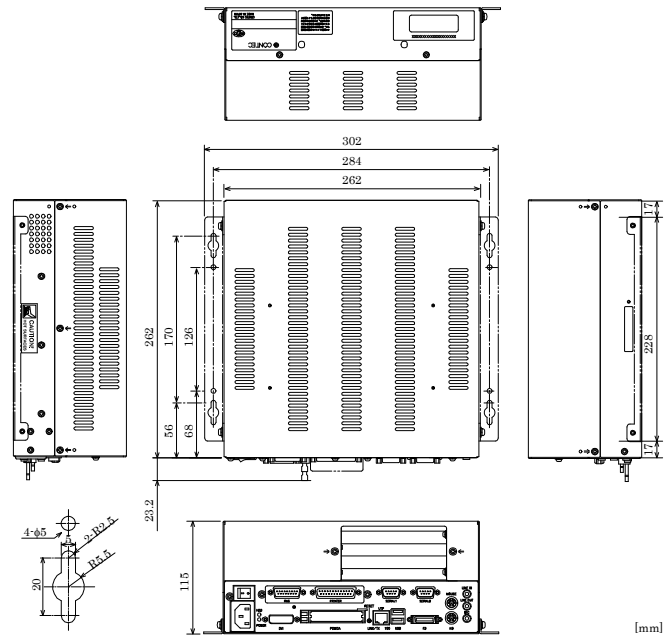
* Replacement of expendables is handled as a repair (there will be a charge).

Physical Dimensions

IPC-BX/M620(PCW)C

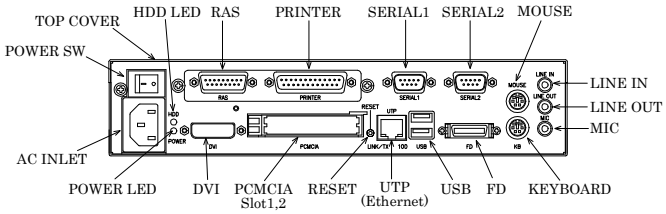


IPC-BX/M620(PCW)CP

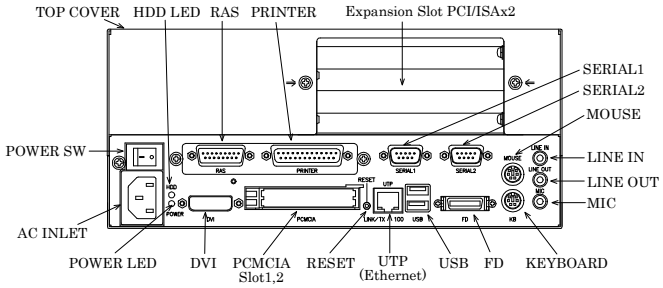


Component Name

IPC-BX/M620(PCW)C

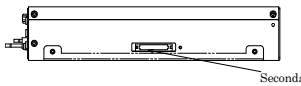


IPC-BX/M620(PCW)CP

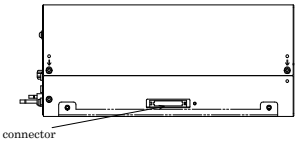


Side view

IPC-BX/M620(PCW)C



IPC-BX/M620(PCW)CP



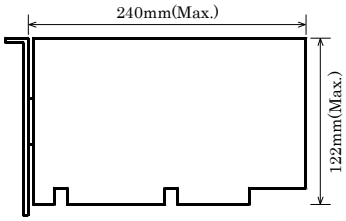
Component	Function
LINE IN	Line in (ϕ3.5 PHONE JACK)
LINE OUT	Line out (ϕ3.5 PHONE JACK)
MIC	Microphone input (ϕ3.5 PHONE JACK)
KB	Keyboard connector (MINI-DIN, 6pin)
MOUSE	PS/2 mouse connector (MINI-DIN, 6pin)
SERIAL1	Serial port 1 connector (9pin, male D-SUB)
SERIAL2	Serial port 2 connector (9pin, male D-SUB)
FD	Floppy disk drive connector (26pin, half-pitch connector)
USB	USB port connector
UTP	Ethernet connector (RJ-45)
PCMCIA	PCMCIA card slot <C, CP models>
DVI	DVI connector (29pin, DVI-I)
PRINTER *1	Parallel port connector (25pin, female D-SUB)
RAS *1	RAS function and RS-485 connector (15pin, female D-SUB)
SERIAL3 *1	Serial port 3 connector (9pin, male D-SUB)
SERIAL4 *1	Serial port 4 connector (9pin, male D-SUB)
RESET	Hard reset push button
Expansion Slot	PCI/ISA x 2 <CP model >
POWER	Power ON indicator
HDD	Internal hard disk access lamp
POWER SW	Power switch
AC INLET	AC power supply input connector
SECONDARY IDE	Secondary IDE connector (dedicated 40pin half-pitch connector)

* The two ports can be used as the PRINTER/RAS or SERIAL3 /4 ports using the bundled dedicated bracket. (factory settings: PRINTER, RAS)

Expansion Slots (CP Model)

The CP model has two PCI/ISA bus expansion slots able to mount both PCI bus and ISA bus boards.

Board Dimensions Allowed



⚠ CAUTION

A board that uses the back of the board edge connector (the shaded area in the figure) may not be mounted.

The following signals cannot be used on ISA bus slots.
-5V, IOCHK, REFRESH, MASTER

The PCI bus conforms to the 32-bit specification. The operation of dual 64-bit/32-bit boards such as the ADAPTEC 39160SCSI board or Intel Pro1000/MT network board has not been verified.

Power Supply to Expansion Slots

The following table lists the voltage that can be supplied to a board in an expansion slot and the total current capacity of all slot:

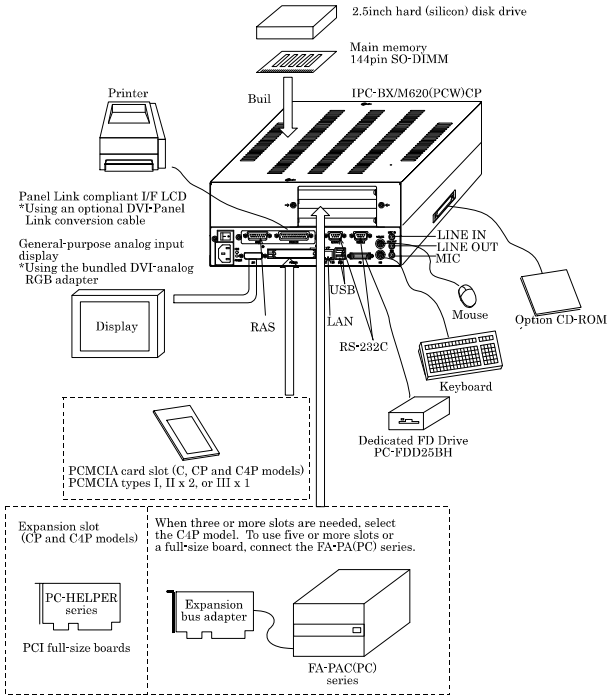
<IPC-BX/M620(PCW)CP>

Voltage	Current capacity (Max.)
+5V	2A
-5V	Not supplied
+12V	0.5A
-12V	80mA

⚠ CAUTION

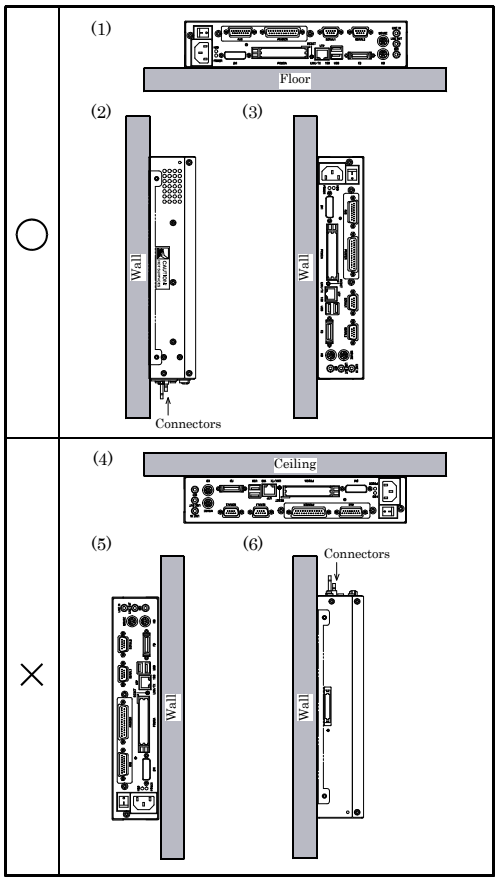
Make sure that the total current consumption by the boards installed in the expansion slots does not exceed the above current capacity.

System Configuration



Installation Requirements

The BOX-PC can be installed in any orientation (1) - (3). Avoid orientation (4) - (6) since it might not adequately dissipate heat. Similarly, to maintain the ambient temperature within the range specified in the specifications, ensure a clearance between the unit and surrounding equipment of at least 100mm for the top and rear and 50mm for the bottom and sides.



Distances between the BOX-PC and Its Vicinity